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Caprella kominatoensis n. sp. (Amphipoda, Caprellidae)
from Amatsu-Kominato, Chiba, Japan

By

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Abstract *Caprella kominatoensis*, a new species of the Caprellidae collected from Amatsu-Kominato, Chiba Prefecture, Japan, is described. It is distinguished from *C. decipiens* MAYER, 1890, chiefly by the presence of grasping spines on pereopods V to VII and by the absence of subpalmar spines on gnathopod II.

Introduction

Caprellid amphipods are generally associated with seaweeds and hydroids in sublittoral zone. The large number of species reported in the world were founded in Eastern Asia, mostly in Japan (MCCAIN & STEINBERG, 1970). UTINOMI (1947) reported 57 species of 12 genera from the coastal regions of Japan, and ARIMOTO (1976) recorded 70 species of 16 genera. In addition to these works, VESSILENKO (1974) studied the Caprellidea of the Japan Sea and other seas surrounding U.S.S.R.

During an ecological study of caprellids associated with the green alga, *Cladophora wrightiana* HARVEY, in Amatsu-Kominato, Chiba Prefecture, Japan, facing the Pacific Ocean, the author recognized a new species of the Caprellidae. This species has neither spine nor projection on the head and body, and carries long antenna I.

Material

Several specimens were examined, these were associated with *Cladophora wrightiana* HARVEY collected at Amatsu-Kominato, Chiba Prefecture, Japan (35° 07'02"N, 140°11'20"E). Holotype, male 13.5 mm, collected on Sep. 21, 1982, deposited in the National Science Museum, Tokyo, (NSMT-Cr 9096). Allotype, female 11.6 mm, collected on Aug. 22, 1982, (NSMT-Cr 9097). Paratypes, 5 males and 3 females, collected from Aug. 22, 1982 to Oct. 22, 1982 (NSMT-Cr 9098).

Caprella kominatoensis n. sp.

(Figs. 1–4)

[Japanese name: Kominato-warekara]

Diagnosis. Head rounded; body having neither spine nor projection; pereonite

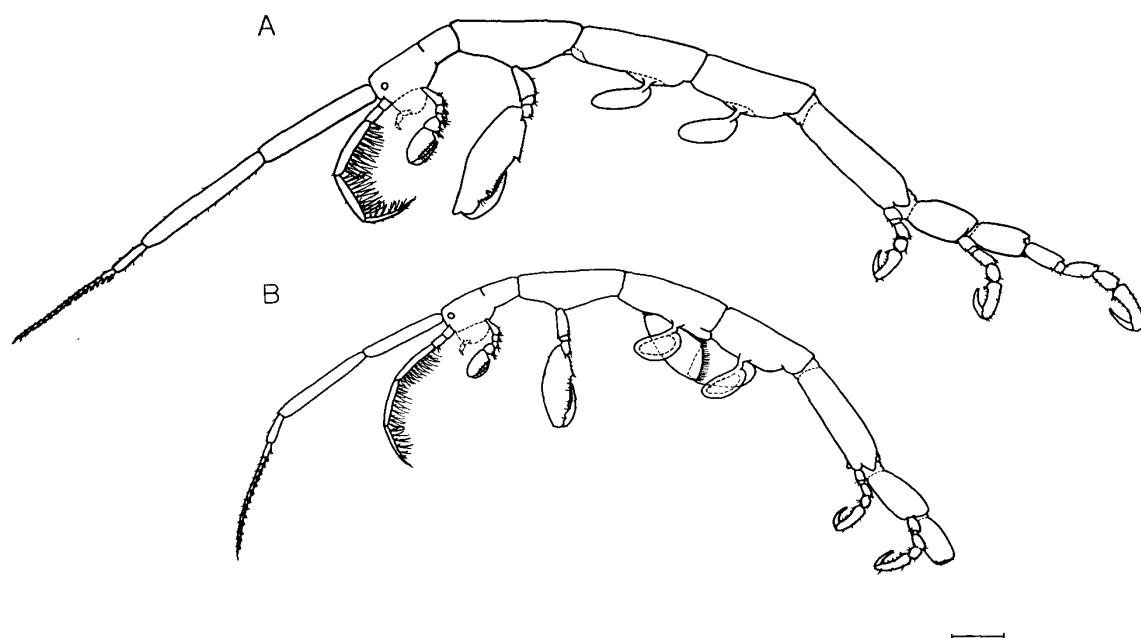


Fig. 1. *Caprella kominatoensis* n. sp., A: holotype, male; B: allotype, female. Scale equals 1 mm.

V longest; antenna I longer than half the body length in adult; peduncular segment III shortest; ischium of gnathopod II equal to or shorter than one-third the length of pereonite II; propodus of gnathopod II oblong, with a palmar spine; pereopods V to VII with one pair of grasping spines.

Description. Adult male: holotype (Figs. 1 A, 3 A–D, H–J); body length 13.5 mm; head rounded; body having neither spine nor projection; pereonite V longest; pereonites II and III subequal and slightly shorter than pereonite V; length of other segments shortened in the order of pereonites IV, I (with head), VI, and VII.

Antenna I (Fig. 3 A) longer than half the body length; peduncle stout; peduncular article II slightly shorter than half the peduncular length; peduncular article I slightly shorter than peduncular article II; peduncular article III shorter than one-third the length of peduncular article I; flagellum shorter than half the peduncular length and having 16 segments; antenna II (Fig. 3 B) shorter than peduncular length of antenna I; flagellum having two segments and plumose swimming setae on ventral parts.

Gnathopod I (Fig. 3 C) with propodus carrying long setae; one pair of grasping spines on proximal part of palm; gnathopod II (Fig. 3 D) attached to middle of pereonite II; ischium shorter than one-third the length of pereonite II; propodus oblong; length of propodus subequal to three times the breadth and length of pereonite II; a stout palmar spine on a proximal projection near the middle of palm; a triangular tooth on distal part of palm; a poison tooth near the triangular tooth with a narrow “U” notch.

Oval gills on pereonites III and IV bent forward.

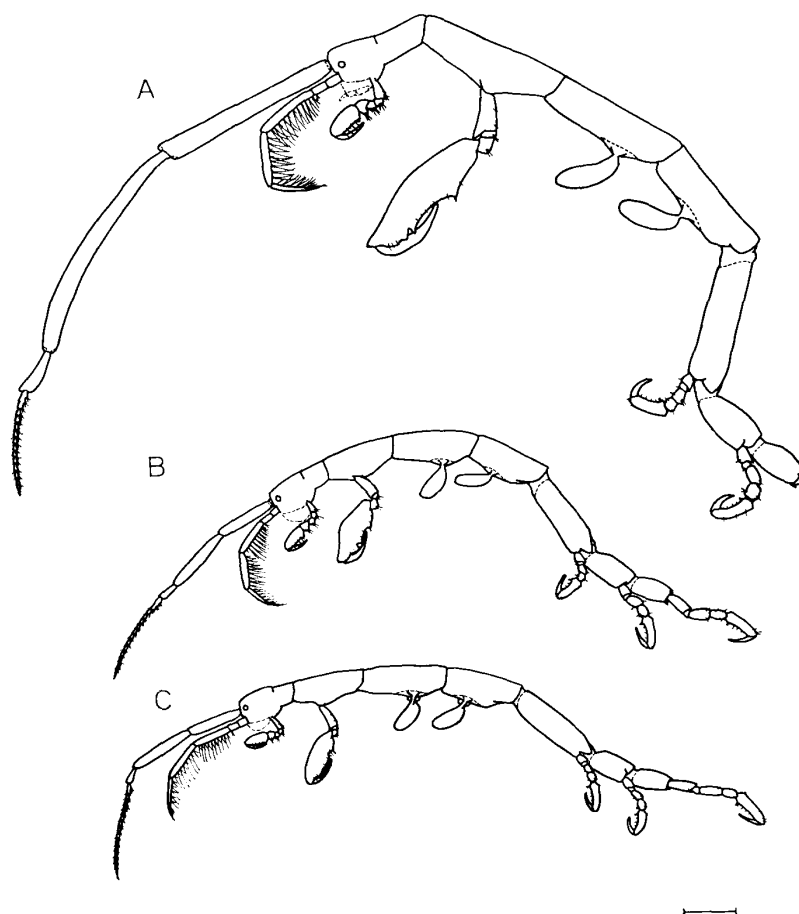


Fig. 2. *Caprella kominatoensis* n. sp., paratypes; A: male; B: young male; C: young female.
Scale equals 1 mm.

Ischium of pereopod V (Fig. 3 H) with a triangular projection on dorsal end; propodus carrying one pair of grasping spines at base of palm; dactyl ventrally concave; shape of pereopods VI (Fig. 3 I) and VII (Fig. 3 J) almost same as that of pereopod V; pereopod VII longest; pereopod VI slightly longer than pereopod V.

Mouth parts (Figs. 4 A–E): maxilliped (Fig. 4 A) composed of outer lobe, inner lobe and palp; outer lobe bearing 6 stout spiniform teeth and many setae; inner lobe with some stout spiniform teeth and many feathered setae; palmar segment IV stout, concave and longer than the setae on segment III; palp of maxilla I (Fig. 4 B) with long setae on lateral part and several spines on edge, and its outer lobe with 7 stout spiniform teeth; outer and inner lobes of maxilla II (Fig. 4 C) having many long setae on their edges; right and left mandibles (Figs. 4 D, E) without palp; incisor having 5 teeth of unequal length; lacinia mobilis divided into 5 teeth; right mandible bearing two setal rows and left mandible three rows.

Abdomen (Fig. 4 F) composed of one pair of abdominal appendages and one pair of lobes; abdominal appendage having two segments; rounded edge of appendage

bearing some setae; lobes also bearing some setae.

Adult female: paratype (Figs. 1 B, 3 E); body length 11.6 mm; head and body having neither spine nor projection; proportion of body segments almost same as in males.

Antenna I slightly longer than half the body length; flagellum shorter than the length of peduncle and having 15 segments; antenna II shorter than peduncular length of antenna I.

Gnathopod II (Fig. 3 E) attached to front part of pereonite II; length of ischium one-third the length of pereonite II; length of propodus, three times the breadth, shorter than that of pereonite II.

Gills on pereonites III and IV rounded plates.

Oostegites on pereonites III and IV thin leaves; many filamented setae on edge of oostegite on pereonite III.

Pereopod VII missing.

Abdomen with a pair of lobes.

Young male (Figs. 2 B, 3 F): body length 8.8 mm; pereonite V longest; length of other segments shortened in the order of pereonites III, II, IV, I (with head), VI, and VII.

Antenna I slightly longer than half the body length; flagellum having 14 segments; antenna II slightly longer than peduncular length of antenna I.

Gnathopod II (Fig. 3 I) attached on front part of pereonite II; length of ischium one-third the length of pereonite II; poison tooth not so well developed as that of adult male.

Young female (Figs. 2 C, 3 G): body length 8.7 mm; shape of both body and antenna I and proportion of body segments almost same as those of young male.

Gills on pereonites III and IV oval.

Oostegites on pereonites III and IV, like small buds, much shorter than gill length.

Remarks. Antenna I of some adult male (Fig. 3A) is developed approximately equal to three-fourths of body length. Its peduncular article II is ventrally concave and the peduncular article III is dorsally concave.

Discussion

Caprella kominatoensis n. sp. is closely related to *C. decipiens* MAYER, 1890.

MAYER (1890) states that *C. decipiens* has neither spine nor projection on body segments, and pereopods V to VII are without grasping spines. His figures (pl. 7, figs. 37–41) show that two subpalmar spines are present on the propodus of gnathopod II and the antenna I is shorter than half the body length. ARIMOTO (1930) describes that the head is rounded, the body is slender, without spines, the peduncular articles I and II of antenna I are stout, the peduncular article III is much shorter than the other segments, antenna I of male is shorter than half the body length, while that of the female is longer than half the body length, and the pereopods V to VII lack the

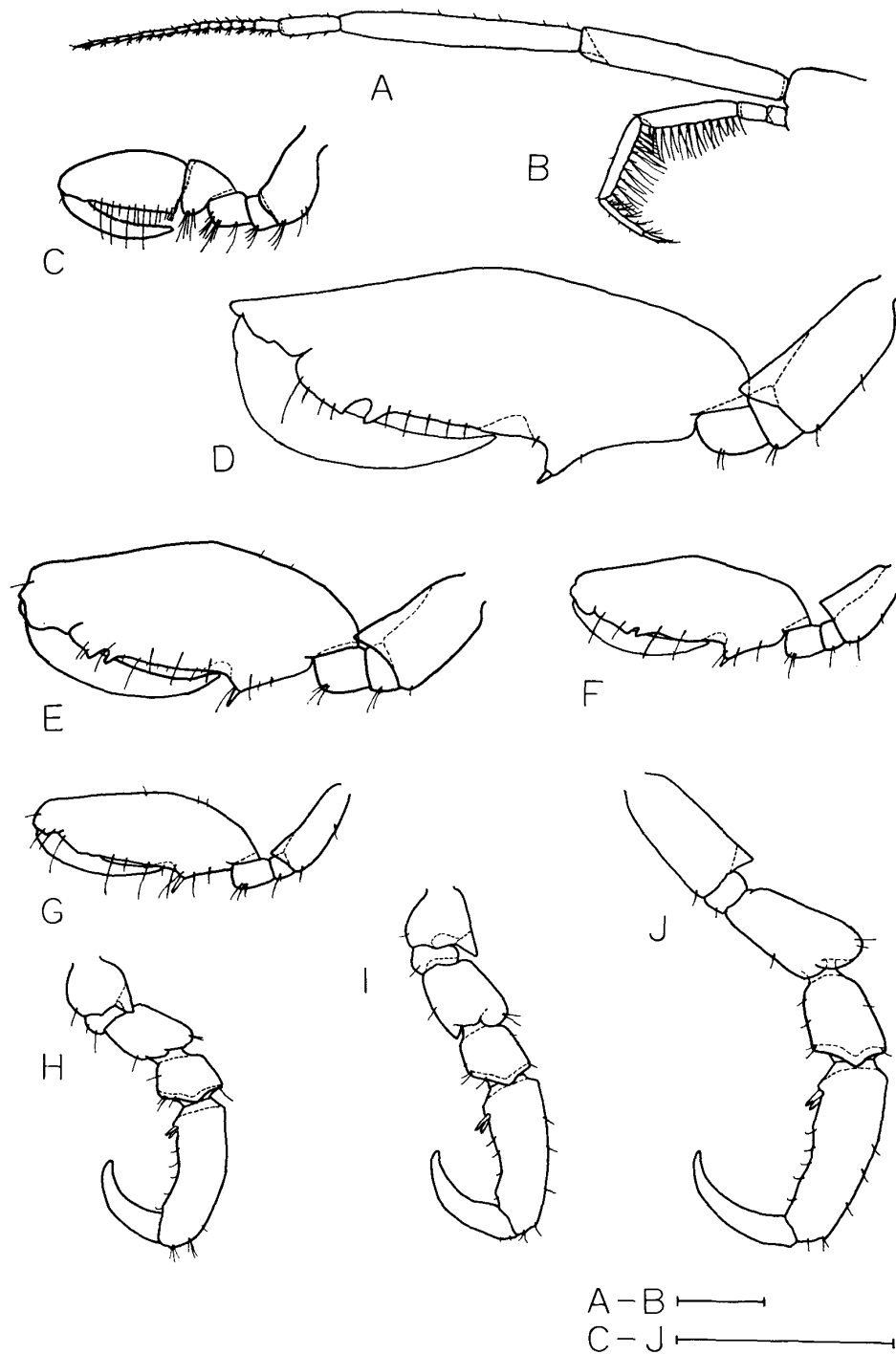


Fig. 3. *Caprella kominatoensis* n. sp., holotype, male; A: antenna I; B: antenna II; C: gnathopod I; D: gnathopod II; H: pereopod V; I: pereopod VI; J: pereopod VII., allotype, female; E: gnathopod II., paratypes, young male; F: gnathopod II., young female; G: gnathopod II. Scale equals 1 mm.

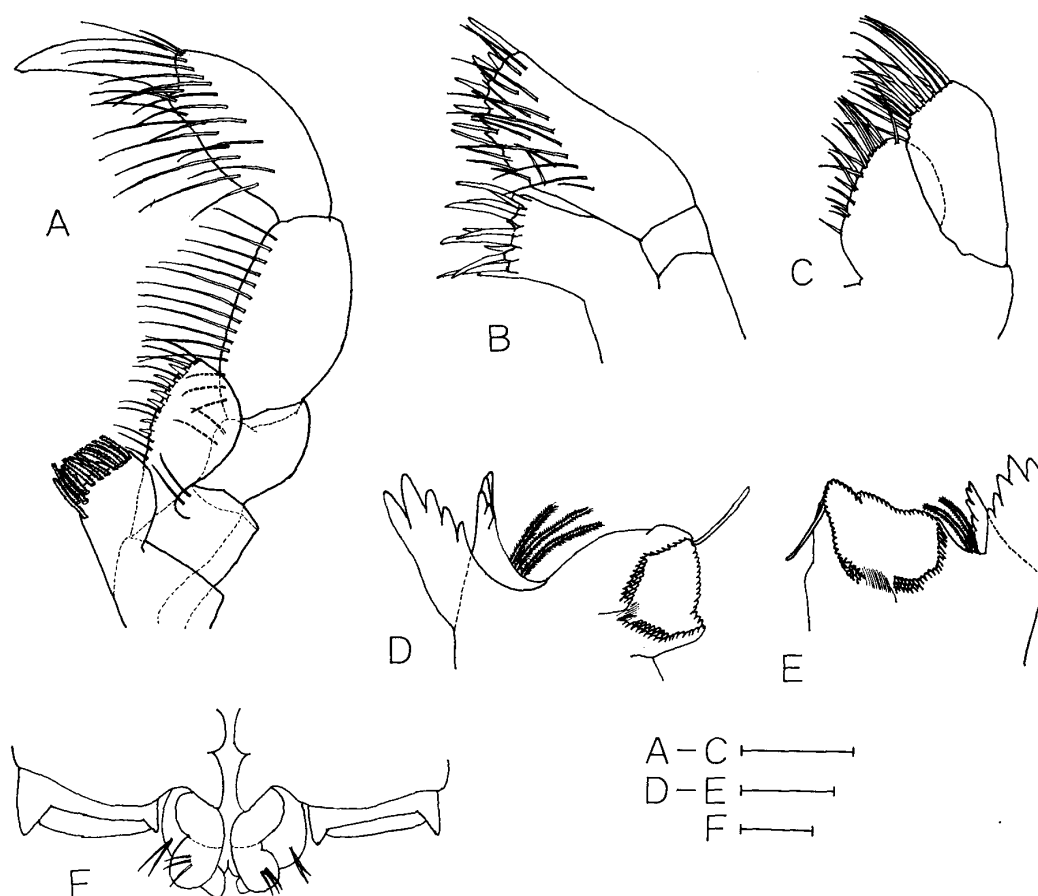


Fig. 4. *Caprella kominatoensis* n. sp., mouth parts of male; A: maxilliped; B: maxilla I; C: maxilla II; D: left mandible; E: right mandible. Abdomen of male; F: abdomen. Scale equals 0.1 mm.

grasping spines on each propodus. ARIMOTO (1976), moreover, describes that two subpalmar spines are present on the propodus of gnathopod II, the pereonite III is the longest of the body segments in the male, while in the female pereonites II and V are subequal in length and longer than the others.

Caprella kominatoensis differs distinctly from *C. decipiens* in the presence of grasping spines on pereopods V to VII, the absence of subpalmar spines on gnathopod II, antenna I of male being longer than half the body length, and pereonite V being the longest of all the body segments.

This species is associated with *Cladophora wrightiana* HARVEY, which is the representative perennial green alga in the warm seas around Japan and spreads over rocks at depth greater than several meters (CHIHARA, 1960). In Amatsu-Kominato, *C. wrightiana* also grows on the upper parts and sides of rocks buried with sand in the shallow sublittoral zone.

CAINE (1983) reports that the body color of *Caprella penantis* LEACH, 1814 is

purple, which is similar to that of its host sea whip, *Leptogorgia virgulata* L. For *C. kominatoensis*, the peduncle of antenna I, head and pereon are green, same in the green alga, *Cladophora wrightiana*. But the flagellum of antenna I, antenna II, mouth parts, gnathopods I and II, the gills and pereopods V to VII are transparent.

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